UNITED STATES GOVERNMENT

Memorandum

TO : OC Equipment Board Members

DATE: 12 May 1977

25X1 FROM : [redacted]
OC Equipment Board Secretary

SUBJECT: Minutes of OC Equipment Board Meeting No. 4-77

1. Meeting No. 4-77 was held on 26 April 1977 in the D/CO Conference Room. The following persons attended:

25X1 [redacted]

DD/CO	Chairman
OC-O	Member
OC-E	Alternate
OC-S	Alternate
OC-CS	Member
OC-P&B	Alternate
OC-PS	Observer
OC-E	Guest
OC-[redacted]	Guest 25X1
OC-E	Guest
OC-O	Guest
OC-E	Secretary

2. The meeting was opened by Mr. [redacted] 25X1 who complimented Mr. [redacted] 25X1 and his working group for the paper they prepared on the OC Alternatives in the KY-70 Program (attached). Mr. [redacted] 25X1 said that in the preparation of the paper, which gives four alternatives, the biggest problem was determining the quantity of KY-70's needed for each alternative. The only controversial issue in the paper came up during the preparation of Alternative IV, the Unilateral System.

3. The Chairman asked the Board if there were any questions on the paper prior to voting on the alternatives. Mr. [redacted] 25X1 asked if complete interoperability between CIA users and the rest of the Government was required. The

[redacted] 25X1

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Chairman replied that this was a question we would put before the EAG, and he doubted that they would require it. 25X1 Mr. [redacted] disagreed, citing discussions with FRD and other future users who have a need for interoperability, especially with the FBI. And, we have also emphasized this need with DOD in other secure voice planning. Mr. [redacted] 25X1 asked when we must place an order for the KY-70's. Mr. 25X1 [redacted] said that FY-77 or 78 funds could be used, and Mr. [redacted] added the order must be placed by the first quarter of FY-78. The Chairman said OC would have to go before the Deputy Directors to request funds for this purchase.

25X1 4. The Chairman asked the members which alternative they favored. Mr. [redacted] said No. 1 was the best. Mr. 25X1 [redacted] favored No. 1 and proposed we maintain close liaison with NSA and NRL on secure voice equipment development. Mr. 25X1 [redacted] declined to vote at this time. Mr. [redacted] asked 25X1 what the chances are of the STU-II development slipping? 25X1 Mr. [redacted] replied that the chances are high that the development will slip; and we, OC, should be prepared to pick it up if it is dropped by NSA for any reason. Mr. [redacted] 25X1 preferred Alternative No. 2 , and if adequate funds were a problem, we could then go to Alternative No. 1. Mr. [redacted] 25X1 25X1 preferred No. 1. Mr. [redacted] favored No. 1. Mr. [redacted] 25X1 voted for No. 1, and stated that we have many long-standing requirements that must be filled. Mr. [redacted] opted for 25X1 No. 1 and suggested that the buy be kept as small as possible by asking the users to reevaluate their requirements. Mr. 25X1 [redacted] said that both [redacted] have been contacted in- 25X1 formally, and both agreed that they could reduce their requirements somewhat.

25X1 5. Mr. [redacted] asked how the STU-I and STU-II programs are affecting the Military programs such as P2SV. Mr. [redacted] 25X1 said that the Military is interested and plans to make P2SV 25X1 compatible. Mr. [redacted] said there has been a very noticeable shift away from P2SV by the civilian agencies since the Goldwine units have been delivered. Many requests for service have been cancelled.

25X1 6. Mr. [redacted] pointed out that we would have many problems if the delivery of STU-II Units are delayed. Mr. 25X1 [redacted] said we could provide Narrow-Band Voice Service if 25X1 necessary. Mr. [redacted] questioned why we shouldn't go with Alternate #2 immediately with #1 as a backup position. Mr.

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25X1 [redacted] replied that he does not forsee any agency making a large buy of KY-70's at this time. Mr. [redacted] added that NSA must go to production of the STU-II in 1979. 25X1

7. The Chairman closed the discussion of this issue, stating there was a consensus among the members for Alternative #1 (a limited buy of KY-70 units soon). He then 25X1 asked Mr. [redacted] to prepare a briefing on this program for the DDA and then to go to brief the EAG.

8. The remaining item of business was discussion of the draft memo for Admiral Turner concerning the secure 25X1 voice program prepared by Mr. [redacted] The Chairman advised that Mr. Knoche's staff had requested that the memo be very specific and should include mention of the proposed buy of KY-70's. After a short discussion, the Chairman requested 25X1 Mr. [redacted] to rewrite the memo incorporating the changes agreed upon earlier in this meeting.

9. As there was no further business to cover, the meeting was adjourned.

[redacted] 25X1

Attachment:
Alternatives for Agency Secure Voice

Distribution:
1 - DD/CO
1 - C/OC-O
1 - C/OC-E
1 - C/OC-S
1 - C/OC-CS
1 - C/OC-P&B
1 - C/OC-PS
1 - Board Secretary

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Minutes Approved

25X1

[redacted]

Deputy Director of Communications

5-16-77
Date

Concur in Paragraph 7.

25X1

[redacted]

Director of Communications

5-16-77
Date

ALTERNATIVES FOR AGENCY SECURE VOICE

NOTE: This paper standardizes on the terminology STU-I, IA, and II. These terms are defined as:

25X1 A. STU-I alias [redacted] alias KY-70
B. STU-IA is an STU-I modified for LPC-10 versus APC-4 processing and 2.4kb vs. 6.4kb transmission.
25X1 C. STU-II alias [redacted] is a desk top unit using LPC-10 processing and 2.4 or 4.8kb transmission.

1. This study is a result of an Equipment Board request to present alternative plans for meeting Agency secure voice requirements. The study is a joint effort of OC-O, OC-E and OC-CS and attempts to present an objective description of the relative merits of each of four alternatives.

2. The statement of the requirement addressed by each alternative is to satisfy approximately 300 subscriber requirements in the time frame FY-79 to FY-85. Attachment 1 provides an analysis of Agency requirements supporting the 300 subscriber projection.

3. In reviewing each alternative, the following considerations were addressed:

a. Security: Does the cryptologic provide the protection required for the information passed and can the system be protected with reasonable physical security measures?

b. Reliability: Is the system expected to provide acceptable availability? With the lack of experience to provide a defensible reliability number for any alternative, the study group concluded that all alternatives could be assumed to have acceptable reliability and availability.

c. Flexibility:

(1) Interoperability - Interoperability between [redacted] 25X1

25X1 [redacted] stations and the CISVN wideband system is required. Interoperability between [redacted] stations and the STU-I 25X1 (or follow-on STU-II) ESVN is also required. It would be advantageous for all CIA narrowband equipment to directly interoperate with each other and the ESVN, although it may not be essential for contractor and overseas stations on an end-to-end basis. However, the lack of end-to-end cryptographic or voice algorithm compatibility will require considerable expenditures to provide adequate quality tandem interface capability.

(2) Transmission Facility Interface - The narrowband secure voice terminal should be capable of analog or digital operation, e.g., wire-line compatible for DDD network and digital system compatible for SKYLINK. It is desirable that the terminal be capable of alternate data service by bypassing the voice processor.

(3) KDC Operation - It is highly desirable that the terminal be capable of KDC operation to provide maximum switching capability without a need for netted cryptographic key.

d. Cost: The question to answer is whether the program cost is within acceptable Agency resource limitations. Sole emphasis on per unit subscriber terminal costs is not an accurate measure of acceptibility.

e. Timing: There are presently many unfulfilled requirements for secure voice within the CONUS. Considering estimated procurement dates, initial procurement and delivery should occur in early FY-78

and early FY-79, respectively. Follow-on procurement and delivery should occur not later than early FY-79 and FY-80, respectively.

f. Politics: Generation of political repercussions should be carefully considered. It must be noted that the Agency has made representation to NCS, and DOD Agencies about our concern for interoperability. Action taken which will precipitate political repercussions must be based on factual information demonstrating that the action is warranted and in the Agency's best interest.

g. Retrofit: Any program plan must include an impact assessment concerning retrofit which might be necessary to achieve interoperability either within the CIA network or with the Intelligence, Diplomatic and Defense communities.

ALTERNATIVE I - "SMALL" STU-I PROCUREMENT

1. Under this alternative, approximately 95 STU-I's would be procured in FY-77/78 to satisfy [redacted] Agency component requirements. The balance of the requirements [redacted] would be covered by STU-II procurements starting in FY-79.

25X1
25X1

2. This approach would provide switched secure voice service to the many Agency components [redacted] who have requirements to talk with Headquarters and other government elements, many of whom are ESVN members. Contractor links and foreign requirements would continue to be protected by narrowband vocoders until STU-II's become available.

25X1

3. It can be reasonably assumed that the ESVN/KDC will be found acceptable for the protection of sources and methods and, therefore, eliminate the need for netted key material. Cryptologic is adequate for the requirement and the CIK allows for modest physical security protection.

4. Since the requirements for STU-I's would be closely associated with ESVN, there would be a probable need to retrofit the STU-I's with LPC-10/2.4kb capability (STU-IA) in the FY-79/80 time frame as ESVN prepares to be compatible with DOD systems using the STU-II. Current estimates for retrofit are approximately $5K per terminal.

5. The projected political impact is as follows:

a. Internal - This alternative would pacify those Agency customers who require voice communications with other government elements employing STU-I that are not accessible via current voice systems. It can also be expected to increase resentment in some components

that are already resentful of "OC's lack of responsiveness." The largest source of resentment will probably be the DDS&T components who will view OC's action as being not in their best interest.

b. Community - Since all outward manifestation of this approach will demonstrate a commitment to compatibility, all interconnecting government elements should view this positively. NSA and DOD would accept this as a pragmatic solution to current Agency problems, not posing a threat to the ultimate system architecture that they support.

c. Legislative - By maintaining community compatibility, our actions should be viewed positively by congressional staffs. Delaying further commitments to ensure longer range system compatibility in a cost-effective manner should likewise be viewed positively. The only vulnerability seen is in the case where events lead to excessive delays or cancellation of the STU-II in which case we will be open to the "foot-dragging" argument once more. However, this argument would be much diminished so long as community compatibility existed.

6. With STU-I deliveries occurring the last half of FY-78, this would provide the earliest solution to what are judged the highest visibility requirements. Total procurement cost is roughly estimated as follows:

a.	STU-I procurement in FY-77/78	$3.2M
b.	STU-I conversion to STU-IA FY-79	.5M
c.	STU-II procurement FY-81 forward	2.2M
		$5.9M

ALTERNATIVE II - "LARGE" STU-I PROCUREMENT

1. This alternative involves the procurement of about 165 STU-I's in FY-77/78 to satisfy the entire [redacted] requirement, including contractor links. There would be a subsequent buy of about [redacted] STU-II's to satisfy foreign requirements. 25X1 25X1

2. This approach would allow virtually all current requirements to be met by FY-80 with foreign requirements being met with vocoders until STU-II's can be implemented.

3. The cryptologic and physical security would be equivalent to Alternative I.

4. Retrofit problems with this approach are proportionately greater. While the contractor terminals could conceivably operate indefinitely without retrofit, the problems of compatibility within CISVN and possible need for interface with foreign field would most likely lead to complete retrofit.

5. Politically, this alternative promises to create a more diverse set of reactions:

a. Internal - By moving at the earliest date to satisfy the "suppressed demand" for secure voice service, all Agency customers should view the action as positive. The only negatives foreseen are the inevitable complaints regarding size and operational characteristics.

b. Community - All other agencies and departments would view this action as a positive move consistent with our past actions. There would be some resentment within DOD and NSA since they view the STU-I as an interim system and desire community support for the STU-II to maintain their system architecture.

c. Legislative - The reaction of congressional staffs cannot be predicted. While making a major commitment to STU-I would alleviate some of the current pressures and be viewed as yielding to greater wisdom, this could well turn around several years hence and become a cause celebre of poor planning and lack of cooperation with other major systems such as Phase II Autosevocom.

6. This alternative would address the entire Agency requirement at the earliest time. There is obviously a larger funding problem.

a. STU-I procurement FY-77/78	$5.75M
b. STU-I conversion to STU-IA FY-79	.83M
c. STU-II procuremetn FY-81 forward	1.55M
	$8.13M

ALTERNATIVE III - STU-II ONLY

1. This alternative involves forestalling significant expansion of

25X1 [redacted] secure voice until the STU-II is available. High priority requirements would be met with existing systems. STU-II procurement is scheduled for FY-79 with first deliveries expected in mid-FY-80.

2. This approach would provide community compatible switched service so long as the ESVN is retrofitted for STU-IA operation. Failure to retrofit ESVN would result in the highest visibility requirements being inadequately addressed. Customer acceptance of the STU-II would be much greater because of the significantly smaller terminal size.

3. As in previous alternatives, cryptologic and physical security of subscriber terminals would be adequate.

4. Eliminating the need for an Agency retrofit program combined with the lower estimated production costs results in the lowest cost program.

5. Politically, this alternative promises to have the worse implications over the short term.

a. Internal - This alternative can reasonably be expected to significantly increase criticism of OC since it will further delay expansion of secure voice service and create intercommunication problems with other government elements who did not have a capability before the STU-I. Arguments regarding the wisdom of awaiting the STU-II to save dollars will be accepted in few places outside the "Budget Chain."

b. Community - There will be pressure and criticism from some Agencies and Departments who commit to STU-I and find that they have

only partially alleviated their problem because CIA failed to keep pace with them. The White House, FBI, and ERDA are several likely sources of criticism. NSA and DOD will be supportive of our decision to commit to STU-II's but antipathetic to our interim problems created by that decision.

c. Legislative - Congressional staffs will tend to view our decision as a maverick performance and continuation of "our NIH attitude." With the arrival of the STU-II, criticism will abate.

6. The cost of this procurement program would impact starting in FY-79. Total STU-II cost [redacted] 25X1

ALTERNATIVE IV - UNILATERAL SYSTEM

1. This alternative would require Agency development and production of a subscriber terminal capable of meeting the operational requirements of the customers, i.e., interoperable and compatible with other community terminals over the switched network. Although a unilateral system could be designed to meet a subset of the requirements, e.g., contractor links, unit costs would rise making this solution non-competitive with other alternatives.

2. The unilateral system would have to be compatible with the STU-I, convertible to STU-IA and capable of operating from KDC generated key. Thus, to make this approach attractive, total program cost would have to be dramatically lower than Alternative I. There is little possibility that a unilateral approach would result in schedule improvements.

3. The above comments combined with the following political predictions argue for this alternative being declared inviable at this time.

a. Internal - So long as the system provided adequately addresses customer needs, this alternative will be favorably received. Financially, the system will need to be significantly less costly than competitive NSA hardware to justify the bureaucratic jeopardy of a unilateral, competitive development.

b. Community - Most other government elements are interested only in system interoperability. So long as any unilateral system provides that feature, the sole source of criticism would be NSA. NSA can be expected to protect loudly both on the issue of charter responsibility and on the instinct of self-preservation.

c. Legislative - Congressional staffs could be expected to review in-depth any unilateral system proposal. The only system that they could be expected to support is one that NSA also supports.

4. There is no way to provide reasonable estimates of program costs under this alternative. Best judgement is that costs would be at least equivalent to Alternative I.

5. Significant delay in the STU-II program should cause reconsideration of this alternative.

25X1

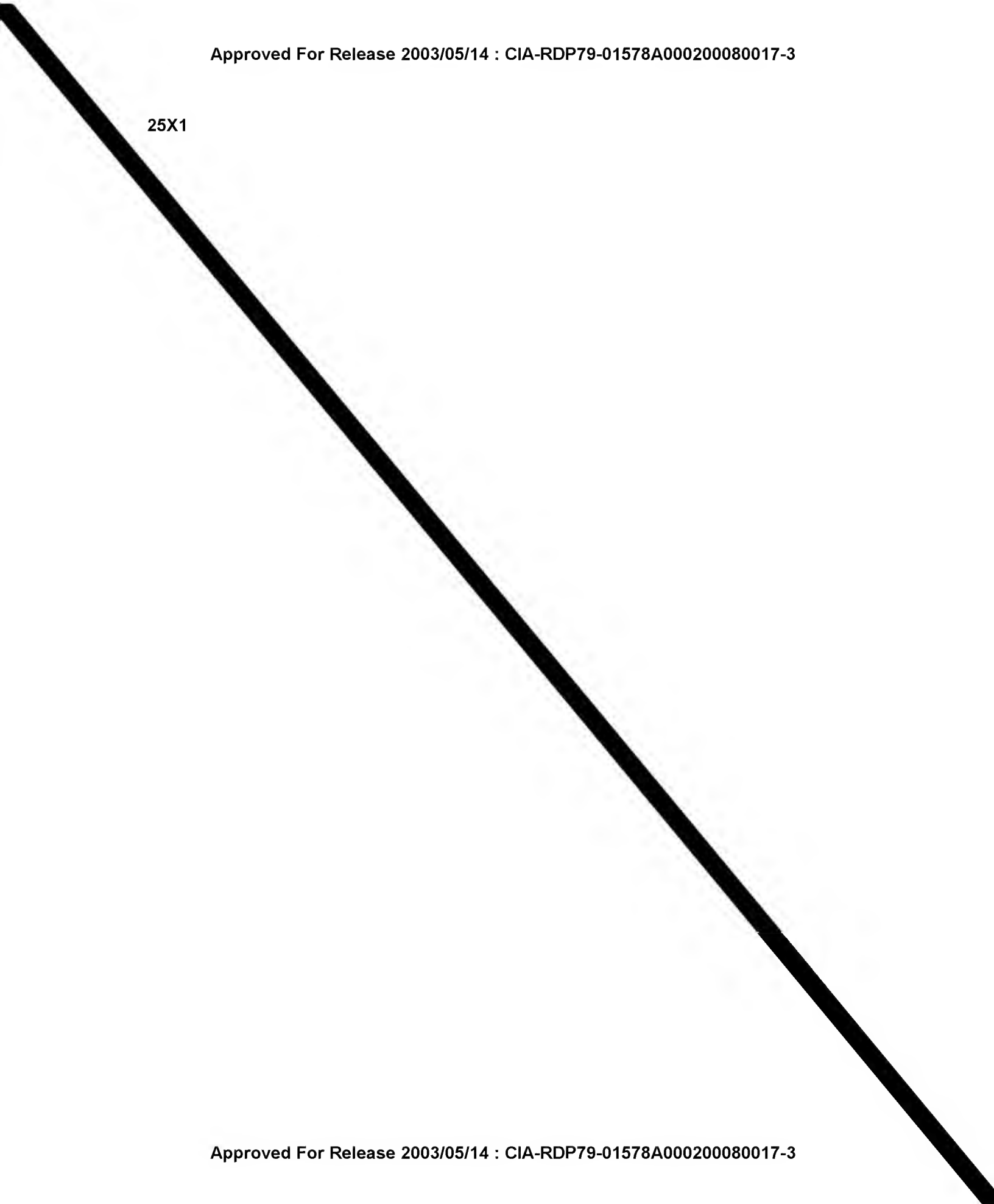

TABLE 1

25X1

TOTAL	32

Operational Requirements

1. Circuit switching allowing direct calling between users of the equivalent switching or tandem capability at Headquarters, capable of operation over [redacted] unconditioned telephone lines. 25X1

2. Cryptographic system which provides capabilities of netted key without network vulnerability associated with terminal compromise.

3. Capability for operation with central Key Distribution System.

4. BLACK and RED digital interfaces providing BLACK analog and digital, and RED data and voice capabilities desirable.

25X1

TABLE 2

NOTES: A. OD&E 15 units includes a new requirement which may be forthcoming. The documented OD&E requirement is 3 contractors.

B. Numbers in parantheses indicate the number of units required for point-to-point non-netted key service if the KDC concept is not utilized and frequent interface key changes are operationally infeasible.

25X1 C. [redacted] unit number includes projected expansion through 1984.

Operational Requirements

1. Cryptographic system which could be used at contractor facilities without the requirement for an equivalent number of terminals at Headquarters.

2. Cryptographic system which provides capabilities of netted key without network vulnerability associated with terminal compromise.

3. Capability for operation with a central Key Distribution System.

4. Desirable to provide BLACK analog and digital, and RED data and voice interface capabilities.

5. System which is capable of operating over DDD unconditioned telephone lines.

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